FORMING METHOD OF OPTICAL DISK SUBSTRATE

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Abstract of **JP10149587**

PROBLEM TO BE SOLVED: To obtain good transfer property in both of the inner and outer peripheral parts by forming a heat insulating layer of a specified thickness range on the lower surface of a stamper or forming a heat insulating layer having the thickness changing from the center part of the substrate to the outer peripheral part. SOLUTION: As for a ceramic material 13 to form a heat insulating layer, zirconia is used and is formed to 0.2 to 1.0mm thickness range. When the forming process is carried out at 380 deg.C as the upper limit temp. for a resin, the center part of the substrate where a gate is disposed reaches 380 deg.C, however because the temp. in the peripheral part of the substrate far from the gate is lower by about 30 deg.C, the resin temp. in the peripheral part is 350 deg.C. From previous experiments, it is necessary that the temp. on the interface between the surface of the stamper 4 and the resin is >=130 deg.C which is higher than the thermal deformation temp. (126 deg.C) in order to obtain enough transfer amt. Therefore, it is necessary that the zirconia layer is >=0.2mm thick. On the other hand, when an heat insulating layer is formed, generally the cooling rate decreases and the growing cycle increases.

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